AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A scalable quadrature amplitude modulation (QAM) communication method, comprising the steps of:

distributing bit data in different bit positions for transmission;

combining the bit data in different bit positions into a combined signal;

modulating the combined signal according to a quadrature amplitude modulation (QAM) technique into a modulated signal; [[and]]

receiving the modulated signal transmitted over a channel;

determining whether to demodulate all data on a bit plane or a portion of the data on certain bit positions according to a transmission quality of the received signal; and

broadcasting the modulated signal over the[[a]] channel.

2. (Cancelled)

3. (Original) The communication method according to claim 1, wherein distributing the bit data in different bit positions further comprises the steps of:

sending different types of media access control (MAC) messages;

generating different types of bit data using different types of channel encoding methods to encode the different types of MAC messages; and

assigning the different types of bit data to different bit positions.

4. (Currently Amended) A communication method of scalable quadrature amplitude modulation (QAM) for a scalable QAM communication system comprising a transmitter and a plurality of clients, comprising the steps of:

the transmitter distributing bit data in different bit positions for transmission;

the transmitter combining the bit data in the different bit positions into a combined signal;

the transmitter modulating the combined signal according to a quadrature amplitude modulation (QAM) technique into a modulated signal; [[and]]

the transmitter broadcasting the modulated signal over a channel;

each client receiving the modulated signal transmitted over the channel; and

each client determining whether to demodulate all data on a bit plane or a portion of the data on certain bit positions according to the transmission quality of the received signal.

5. (Cancelled)

6. (Original) The communication method according to claim 4, wherein the transmitter distributing the bit data in the different bit positions further comprises the steps of:

sending different types of media access control (MAC) messages;

generating different types of bit data using different types of channel encoding methods to encode the different types of MAC messages; and

assigning the different types of bit data to the different bit positions.

7. (Original) The communication method according to claim 4, wherein each client receives the data transmitted over the channel from the transmitter after completing a registration procedure.

8. (Original) The communication method according to claim 7, the registration procedure further comprising the steps of:

the transmitter broadcasting a signal for registration over the channel;

each of the clients determining a type of QAM modulated signal for receiving and a demodulation technique for demodulating the received signal according to the transmission quality of the signal for registration received by the client;

the client sending an uplink request and the demodulation technique used to the transmitter;

the transmitter receiving the uplink request from the client and building a client database in order to complete the registration; and

the transmitter sending packets for the client using a MAC message with a corresponding type.

9. (Currently Amended) A scalable quadrature amplitude modulation (QAM) transmitter comprising:

a media access controller, for sending different types of MAC messages;

a plurality of encoders, for generating different types of bit data using different types of channel encoding methods to encode different types of MAC messages; [[and]]

a bitmap device, for assigning the different types of bit data to different bit positions, and combining the data of different bit positions to generate a first component signal; and

a quadrature amplitude modulator, for receiving the first component signal and modulating the first component signal using the QAM technique.

10. (Currently Amended) The transmitter according to claim 9, further comprises:

a second set of encoders, for generating different types of second bit data using different types of channel encoding methods to encode the different types of MAC messages; and

a second bitmap device, for mapping different types of the second bit data to different bit positions, and combining the data of different bit positions to generate a second component signal; ~~and~~ wherein the[[a]] quadrature amplitude modulator, for receiving the first and the second component signals and modulating the first and the second component signals using the QAM technique.

11. (Currently Amended) A scalable quadrature amplitude modulation (QAM) communication system comprising:

a transmitter, for distributing bit data in different bit positions for transmission, combining the bit data in different bit positions, modulating the combined bit data according to a

quadrature amplitude modulation (QAM) technique into a modulated signal, and then broadcasting the modulated signal over a channel; and

a plurality of clients, for receiving a signal from the channel, and determining whether to demodulate all data on [[the]]a bit plane or a portion of the data on certain bit positions according to the transmission quality of the received signal.

12. (Original) The scalable QAM communication system according to claim 11, wherein the transmitter further comprises:

a media access controller, for sending different types of MAC messages;

a plurality of encoders, for generating different types of bit data using different types of channel encoding methods to encode different types of MAC messages;

a bitmap device, for assigning different types of the bit data to different bit positions, and combining the data of the different bit positions to generate a first component signal;

a second set of encoders, for generating different types of second bit data using different types of channel encoding methods to encode the different types of MAC messages;

a second bitmap device, for mapping different types of the second bit data to different bit positions, and combining the data of the different bit positions to generate a second component signal;

a quadrature amplitude modulator, for receiving the first and the second component signals and modulating the first and the second component signals using the QAM technique; and

an antenna, for transmitting the signals modulated using the QAM technique to a channel.

13. (Original) The scalable QAM communication system according to claim 11, wherein each of the clients comprises:

an antenna, for receiving an input signal from the channel;

a quadrature amplitude demodulator, for demodulating the input signal into a first symbol and a second symbol, wherein the first and the second symbols are formed by an equal number of bits;

a de-bitmap device, for partitioning each bit of the first and the second symbols according to the bit position of each bit; and

a multi-mode decoder, for determining whether to demodulate all data on the bit plane or data on a portion of the bit positions according to the transmission quality of the input signal.

14. (Original) The scalable QAM communication system according to claim 11, wherein the transmitter broadcasts a signal for registration over the channel.

15. (Original) The scalable QAM communication system according to claim 14, wherein each of the clients determines the type of QAM modulated signal to receive and the type of demodulation method for demodulating the received signal according to the transmission quality of the registration signal received by the client, and sending an uplink request and the demodulation method used by the client to the transmitter.

16. (Original) The scalable QAM communication system according to claim 15, wherein the transmitter builds a client database after receiving the uplink request from a client to complete registration, and the transmitter sends packets for the client using a MAC message with a corresponding type.